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GENERAL AVIATION STATISTICAL DATABOOK

1990–1991 Edition

FOREWORD

The GENERAL AVIATION STATISTICAL DATABOOK has become a useful tool to those examining our industry.

In order to provide the most current statistics on general aviation, the GAMA Statistical Databook is published as soon as possible after data from the FAA's annual "General Aviation Activity and Avionics" survey is available. FAA survey data from 1989, for instance, was not available until November, 1990. GAMA's statistical databook is generally the first published source of this information.

We hope you'll keep your DATABOOK handy as a quick reference for all your questions on general aviation.

The General Aviation Manufacturers Association (GAMA) is a national trade association proudly representing 33 American manufacturers of the finest General Aviation aircraft, engines, avionics, instruments, related equipment and components. In addition to building nearly all the General Aviation aircraft flying in the United States today, GAMA member companies also operate aircraft fleets, airport fixed-base operations, pilot schools and training facilities across the nation.

Headquartered in Washington, DC, GAMA represents the interests of its members before the United States Congress, the Department of Transportation, the Federal Aviation Administration and other federal and state government agencies directly concerned with the air transportation system. It also maintains close working relationships with other associations representing various facets of the aviation community. Through its public information and education programs, GAMA promotes better understanding of the air transportation environment and the important role General Aviation plays in the national economy and serving America's transportation needs.

For more information on General Aviation, chartering or buying an aircraft, learning to fly, or joining one of the many aviation organizations serving the community, call or write the GAMA communications office. We are happy to guide you.

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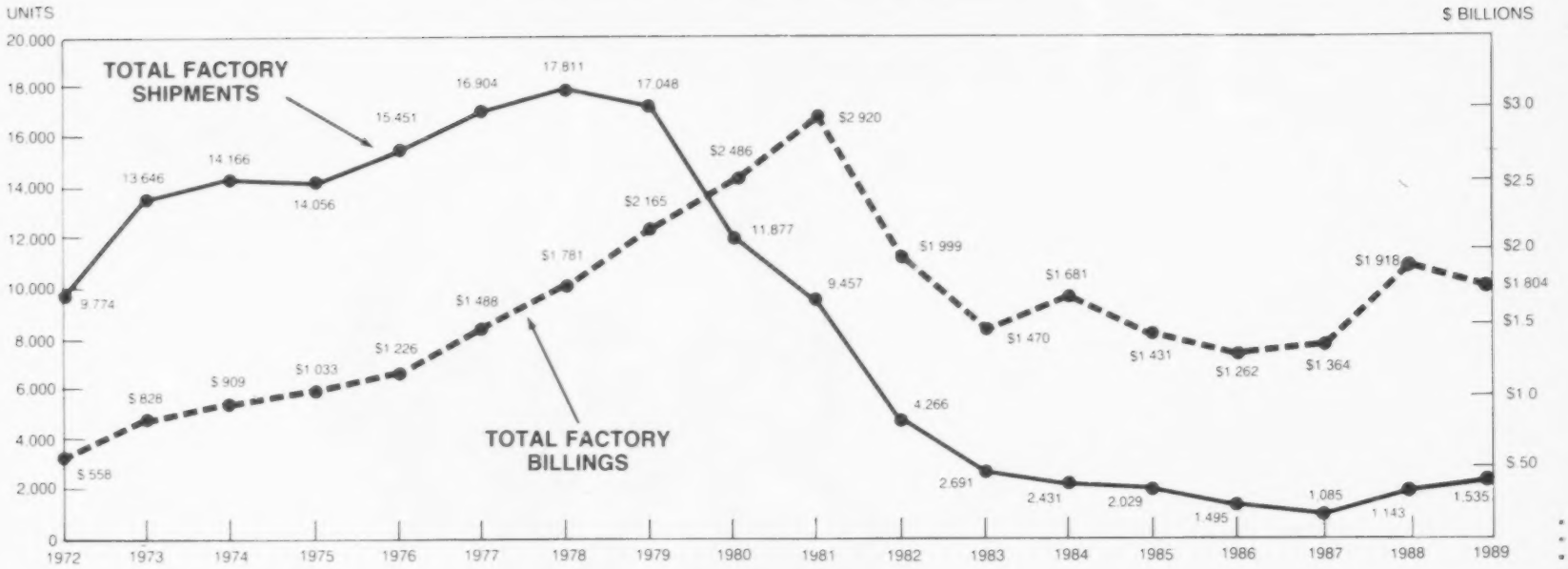
SHIPMENT STATISTICS

Annual Shipments of New U.S. General Aviation Aircraft by Units Shipped, Number of Companies Reporting, and Factory Net Billings

Year	Units Shipped	Companies Reporting	Factory Net Billings (Millions)
1946	35,000	—	$ 110.0
1947	15,594	15	57.9
1948	7,037	12	32.4
1949	3,405	11	17.7
1950	3,386	13	19.1
1951	2,302	12	16.8
1952	3,058	8	26.8
1953	3,788	7	34.4
1954	3,071	7	43.4
1955	4,434	7	68.2
1956	6,738	8	103.7
1957	6,118	9	99.6
1958	6,414	10	101.9
1959	7,689	9	129.8
1960	7,588	8	151.2
1961	6,778	8	124.3
1962	6,697	7	136.8
1963	7,569	7	153.4
1964	9,336	8	198.8
1965	11,852	8	318.2
1966	15,768	10	444.9
1967	13,577	14	359.6
1968	13,698	14	425.7
1969	12,457	14	584.5
1970	7,292	13	337.0
1971	7,466	11	321.5
1972	9,774	12	557.6
1973	13,646	12	828.1
1974	14,166	12	909.4
1975	14,056	12	1,032.9
1976	15,451	12	1,225.5
1977	16,904	12	1,488.1
1978	17,811	12	1,781.2
1979	17,048	12	2,165.0
1980	11,877	12	2,486.2
1981	9,457	12	2,919.9
1982	4,266	11	1,999.5
1983	2,691	10	1,469.5
1984	2,431	9	1,680.7
1985	2,029	9	1,430.6
1986	1,495	9	1,261.9
1987	1,085	9	1,363.5
1988	1,143	9	1,918.4
1989	1,535	11	1,803.9

Source: GAMA

GAMA General Aviation Unit Shipments/Billings



GAMA General Aviation Aircraft Shipments by Type of Aircraft

Year	Total	Single Engine	Multi-Engine	Total Piston	Turboprop	Jet	Total Turbine
1962	6.697	5.690	1.007	6.697	-0-	-0-	-0-
1963	7.569	6.248	1.321	7.569	-0-	-0-	-0-
1964	9.336	7.718	1.606	9.324	9	3	12
1965	11.852	9.873	1.780	11.653	87	112	199
1966	15.768	13.250	2.192	15.442	165	161	326
1967	13.577	11.557	1.773	13.330	149	98	247
1968	13.698	11.398	1.959	13.357	248	93	341
1969	12.457	10.054	2.078	12.132	214	111	325
1970	7.292	5.942	1.159	7.101	135	56	191
1971	7.466	6.287	1.043	7.330	89	47	136
1972	9.774	7.913	1.548	9.446	179	134	313
1973	13.646	10.788	2.413	13.193	247	198	445
1974	14.166	11.579	2.135	13.697	250	202	452
1975	14.056	11.441	2.116	13.555	305	194	499
1976	15.451	12.785	2.120	14.905	359	187	546
1977	16.904	14.054	2.195	16.249	428	227	655
1978	17.811	14.398	2.634	17.032	548	231	779
1979	17.048	13.286	2.843	16.129	639	282	921
1980	11.877	8.640	2.116	10.756	778	326	1.104
1981	9.457	6.608	1.542	8.150	918	389	1.307
1982	4.266	2.871	678	3.549	458	259	717
1983	2.691	1.811	417	2.228	321	142	463
1984	2.431	1.620	371	1.991	271	169	440
1985	2.029	1.370	193	1.563	321	145	466
1986	1.495	985	138	1.123	250	122	372
1987	1.085	613	87	700	263	122	385
1988	1.143	628	67	695	291	157	448
1989	1.535	1.023	87	1.110	268	157	425

Source: GAMA

Estimated Value of GAMA General Aviation Aircraft Shipments By Type of Aircraft (In millions)

Year	Single Engine	Multi-Engine	Total Piston	Turboprop	Jet	Total Turbine
1975	$290	$280	$ 570	$ 180	$ 281	$ 461
1976	376	320	696	238	293	531
1977	473	390	863	296	329	625
1978	516	493	1.009	394	378	772
1979	523	555	1.078	548	540	1.088
1980	391	403	794	875	816	1.691
1981	327	348	675	1.120	1.125	2.245
1982	200	220	420	590	990	1.580
1983	145	115	260	460	750	1.210
1984	147	133	280	436	966	1.402
1985	126	68	194	524	713	1.237
1986	80	43	123	430	709	1.139
1987	80	18	98	477	789	1.266
1988	66	12	78	596	1.242	1.838
1989	104	24	128	524	1.149	1.673

Source: GAMA

GAMA General Aviation Aircraft Shipments by Year and Quarter

YEAR	Quarter I	Quarter II	Quarter III	Quarter IV
1962	1,782	1,744	1,329	1,842
1963	1,806	2,000	1,625	2,138
1964	2,156	2,503	1,934	2,743
1965	2,642	3,008	2,859	3,343
*1966	3,855	4,266	3,881	3,585
*1967	3,392	3,480	2,801	3,811
*1968	3,661	3,545	3,282	3,068
*1969	3,297	3,592	2,825	2,693
*1970	1,929	2,099	1,749	1,500
*1971	1,771	1,902	1,903	1,770
1972	2,157	2,564	2,417	2,636
1973	3,246	3,555	3,442	3,403
1974	3,493	3,576	3,488	3,609
1975	3,777	3,562	3,291	3,426
1976	3,949	4,159	3,479	3,864
1977	4,124	4,513	3,985	4,282
1978	4,176	4,621	4,672	4,342
1979	4,259	4,602	4,426	3,761
1980	3,512	2,756	2,796	2,813
1981	2,389	2,631	2,529	1,908
1982	1,390	1,126	890	860
1983	659	709	717	606
1984	523	563	681	664
1985	455	519	581	474
1986	285	364	393	453
1987	227	330	239	289
1988	260	291	252	340
1989	304	361	425	445

*Quarterly figures do not sum to annual because some manufacturers reported annual shipments only.

Source: GAMA

GAMA General Aviation Aircraft Exports

Year	Units Exported	% of Total Production	Factory Net Billings (Millions)	% of Total Dollars
1965	2,325	19.6%	$ 61.2	19.2%
1966	2,903	18.4%	75.4	16.9%
1967	3,035	22.4%	76.5	21.3%
1968	2,803	20.5%	91.5	21.5%
1969	2,623	21.1%	107.1	18.3%
1970	2,170	29.8%	98.9	29.3%
1971	1,854	24.8%	95.6	29.7%
1972	2,254	23.1%	137.9	24.7%
1973	3,530	25.9%	230.2	27.8%
1974	4,248	30.0%	287.5	31.6%
1975	3,512	25.0%	308.1	29.8%
1976	3,539	22.9%	331.2	27.0%
1977	3,611	21.4%	354.5	23.8%
1978	3,612	20.3%	486.7	27.3%
1979	3,995	23.4%	600.9	27.8%
1980	3,555	29.9%	756.4	30.4%
1981	2,270	24.0%	749.0	25.7%
1982	1,162	27.2%	650.2	32.5%
1983	513	19.1%	316.5	21.5%
1984	334	13.7%	260.7	15.5%
1985	354	17.4%	230.0	16.1%
1986	441	29.5%	343.6	27.2%
1987	439	40.5%	469.3	34.4%
1988	425	37.2%	626.8	32.7%
1989	566	36.9%	587.0	32.5%

Source: GAMA

GAMA General Aviation Aircraft Exports by Type

Year	Single Engine	Multi-Engine	Turboprop	Turbojet
1972	1715	455	55	29
1973	2674	732	58	66
1974	3371	732	75	70
1975	2680	644	122	66
1976	2704	669	114	52
1977	2835	594	126	56
1978	2712	652	166	82
1979	2942	774	181	98
1980	2565	635	245	110
1981	1546	363	259	102
1982	718	227	135	82
1983	298	119	66	30
1984	199	79	25	31
1985	208	69	49	28
1986	272	69	68	32
1987	252	60	78	49
1988	220	52	91	62
1989	385	46	78	57

Source: GAMA

U.S. GENERAL AVIATION FLEET AND FLIGHT ACTIVITY

THE FLEET BY TYPE AND USE . . .

Number of Active General Aviation Aircraft in 1989 By Type and Primary Use

Aircraft Type	Active GA Aircraft	Corporate	Business	Personal	Instructional	Aerial Application	Aerial Observation	Other Work	Commuter Air Carrier	Air Taxi	Other	Inactive
Total All Aircraft	**219,737**	**12,285**	**37,507**	**124,786**	**17,780**	**7,093**	**5,784**	**2,139**	**1,444**	**7,115**	**3,802**	**47,388**
Piston—Total	**193,815**	**4,919**	**36,032**	**117,719**	**16,430**	**6,125**	**4,056**	**1,096**	**631**	**4,431**	**2,374**	**40,989**
One-Engine	170,370	1,799	28,532	110,838	14,858	5,780	3,547	1,018	143	1,753	2,103	37,712
Two-Engine	23,359	3,117	7,485	6,875	1,572	315	509	75	472	2,673	262	3,169
Other Piston	86	3	15	6	0	30	0	2	15	5	9	108
Turboprop—Total	**6,324**	**3,412**	**695**	**159**	**86**	**136**	**60**	**21**	**662**	**689**	**404**	**552**
Two-Engine	6,093	3,397	684	152	85	7	46	20	662	656	387	431
Other Turboprop	230	15	11	7	1	129	14	2	0	33	17	122
Turbojet—Total	**4,402**	**3,194**	**259**	**114**	**25**	**0**	**50**	**14**	**32**	**367**	**347**	**334**
Two-Engine	4,004	2,935	240	109	25	0	24	14	32	366	260	205
Other Turbojet	398	259	19	5	0	0	26	0	0	1	87	129
Rotocraft—Total	**7,475**	**727**	**416**	**1,068**	**694**	**832**	**1,297**	**363**	**21**	**1,629**	**429**	**2,928**
Piston	3,244	44	193	915	551	609	561	132	0	121	118	2,495
Turbine	4,232	682	223	153	144	223	735	231	21	1,508	311	432
Other—Total	**7,721**	**33**	**104**	**5,725**	**545**	**0**	**322**	**645**	**99**	**0**	**248**	**2,585**

Source: FAA

NOTE: Row and column summation may differ from printed totals due to estimation procedures, or because some active aircraft did not report use.

General Aviation Hours Flown by Aircraft Type and Primary Use 1989 (Thousands of Hours)

Aircraft Type	Total Hours	Corporate	Business	Personal	Instructional	Aerial Application	Aerial Observation	Other Work	Commuter Carrier	Air Taxi	Other
Total All Aircraft	**35,012**	**3,739**	**4,689**	**10,328**	**6,489**	**2,023**	**1,861**	**560**	**1,508**	**3,270**	**549**
Piston—Total	**26,971**	**978**	**4,413**	**9,945**	**6,125**	**1,699**	**1,158**	**311**	**419**	**1,758**	**164**
One-Engine	22,307	323	3,309	9,064	5,668	1,661	1,050	292	86	707	147
Two-Engine	4,648	655	1,103	879	457	34	109	19	324	1,051	17
Other Piston	5	2	1	0	4	0	0	9	0	1	17
Turboprop—Total	**3,132**	**1,292**	**145**	**42**	**28**	**87**	**29**	**18**	**1,061**	**297**	**132**
Two-Engine	3,006	1,289	144	42	24	5	17	17	1,061	278	130
Other Turboprop	126	3	1	1	4	83	12	1	0	19	3
Turbojet—Total	**1,654**	**1,195**	**72**	**29**	**1**	**0**	**16**	**3**	**9**	**216**	**114**
Two-Engine	1,542	1,100	66	29	1	0	10	3	9	216	110
Other Turbojet	112	95	6	0	0	0	6	0	0	0	4
Rotorcraft—Total	**2,826**	**268**	**53**	**70**	**272**	**236**	**625**	**167**	**14**	**999**	**125**
Piston	749	12	18	50	227	168	211	28	0	20	10
Turbine	2,077	256	35	20	45	68	414	139	14	979	114
Other—Total	**429**	**5**	**6**	**242**	**63**	**0**	**33**	**60**	**5**	**0**	**15**

Source: FAA

NOTE: Row and column summations may differ because of independent rounding or because some active aircraft did not report use.

. . . AND BY AGE

Age of the General Aviation Fleet in 1990

Aircraft Type	Engine Type	Seats	U.S. Registered Aircraft	
			Number	Average Age in Years
Single-Engine	Piston	1–3	95,809	27.7
		4	100,009	23.4
		5–7	26,901	19.2
		8+	403	34.9
		All	223,122	24.8
	Turboprop	All	406	10.6
	Jet	All	289	32.4
Multi-Engine	Piston	0	1	38.0
		1–3	157	28.5
		4	2,049	23.0
		5–7	20,102	21.7
		8+	6,402	21.8
		All	28,711	21.8
	Turboprop	All	7,658	14.0
	Jet	All	9,426	14.4
All			269,612	23.8

. . . AND BY GEOGRAPHIC AREA

U.S. Active General Aviation Aircraft by Region and State

	1989	1988	1987	1986	1985	1984		1989	1988	1987	1986	1985	1984
ALASKAN	**6,520**	**6,309**	**7,496**	**7,557**	**6,421**	**7,684**	**N.W. Mountain**	**21,634**	**19,914**	**21,181**	**22,004**	**20,901**	**24,502**
Alaska	6,520	6,309	7,496	7,557	6,421	7,684	Colorado	4,539	3,782	4,374	4,273	4,606	5,180
							Idaho	1,998	1,836	2,062	2,274	1,839	2,328
CENTRAL	**11,930**	**12,150**	**13,221**	**13,085**	**12,377**	**13,331**	Montana	2,004	1,808	2,154	2,368	1,890	2,472
Iowa	2,622	2,615	2,910	2,683	2,800	3,416	Oregon	4,353	4,126	4,254	4,543	4,622	5,032
Kansas	3,466	3,500	3,827	4,033	3,855	3,713	Utah	1,388	1,246	1,070	1,284	1,106	1,337
Missouri	4,183	4,068	4,358	4,192	3,934	4,396	Washington	6,439	6,281	6,232	6,160	5,740	6,665
Nebraska	1,659	1,967	2,126	2,177	1,788	1,805	Wyoming	913	835	1,035	1,101	1,098	1,474
EASTERN	**25,236**	**23,928**	**24,075**	**25,487**	**22,585**	**24,297**	**SOUTHERN**	**36,778**	**34,629**	**34,611**	**33,642**	**32,430**	**34,007**
Delaware	1,537	1,112	827	932	530	533	Alabama	3,347	2,539	2,418	2,673	2,608	3,234
D.C.	63	35	37	21	50	31	Florida	13,599	13,831	13,614	12,882	12,340	12,720
Maryland	2,897	3,032	2,660	2,709	2,654	2,870	Georgia	5,340	4,974	4,789	4,517	4,588	4,450
New Jersey	3,994	3,755	3,899	4,291	3,741	4,041	Kentucky	1,606	1,740	1,615	1,738	1,635	1,802
New York	6,601	5,804	6,431	6,772	6,164	6,599	Mississippi	1,954	1,897	2,049	2,060	2,139	2,082
Pennsylvania	5,956	5,808	5,970	6,405	5,705	6,205	North Carolina	5,208	4,688	4,944	4,386	4,544	4,412
Virginia	3,323	3,291	3,205	3,225	2,741	3,137	Puerto Rico	333	72	338	352	233	422
West Virginia	865	1,091	1,046	1,132	1,000	880	South Carolina	2,085	1,988	1,782	1,787	1,700	1,661
							Tennessee	3,306	2,900	3,062	3,145	2,643	2,884
GREAT LAKES	**39,383**	**37,436**	**38,623**	**37,838**	**37,417**	**39,788**							
Illinois	7,581	7,276	7,688	7,603	7,155	9,087	**SOUTHWEST**	**30,998**	**29,506**	**30,357**	**32,669**	**32,414**	**35,341**
Indiana	3,782	4,229	4,098	4,212	4,139	3,797	Arkansas	2,879	2,354	2,724	2,514	2,687	2,920
Michigan	7,875	6,771	7,160	7,060	7,511	7,066	Louisiana	3,270	3,250	3,327	3,746	3,674	4,627
Minnesota	4,750	5,040	4,959	4,507	4,350	5,139	New Mexico	2,401	2,224	2,121	2,302	1,942	2,300
North Dakota	1,637	1,487	1,353	1,615	1,655	1,572	Oklahoma	4,127	4,254	3,827	4,147	4,234	5,345
Ohio	7,896	7,388	7,850	7,283	7,686	7,553	Texas	18,321	17,424	18,358	19,961	19,877	19,941
South Dakota	1,290	1,192	1,154	1,378	1,227	1,393							
Wisconsin	4,572	4,053	4,361	4,180	3,694	4,180	**WESTERN-Pacific**	**37,749**	**36,702**	**38,370**	**38,764**	**36,481**	**38,414**
							Arizona	5,234	5,118	5,085	5,787	4,796	5,177
NEW ENGLAND	**9,396**	**9,600**	**9,111**	**8,952**	**8,016**	**8,393**	California	29,757	28,910	30,982	30,387	29,392	30,494
Connecticut	2,157	2,231	2,016	1,992	1,724	1,863	Hawaii	519	600	486	366	348	463
Maine	1,473	1,307	1,301	1,320	1,039	1,055	Nevada	2,239	2,074	1,817	2,219	1,945	1,823
Massachusetts	3,265	3,687	3,413	3,248	2,994	3,316							
New Hampshire	1,458	1,270	1,338	1,443	1,363	1,298	**Other U.S. Territories**	**97**	**92**	**136**	**107**	**174**	**76**
Rhode Island	456	486	389	560	220	396							
Vermont	587	619	654	388	676	466	**Grand Total**	**219,737**	**210,266**	**217,183**	**220,043**	**210,654**	**220,943**

Column totals may differ from printed totals due to estimation procedures.

Source: FAA

FLIGHT HOURS BY TYPE . . .

Estimated Hours Flown in General Aviation by Type of Aircraft
(in Thousands of Hours)

Through December 31	Total	Fixed Wing			Rotocraft		Balloons Dirigibles Gliders
		Piston	Turboprop	Turbojet	Piston	Turbine	
1977	35,791	30,965	1,549	1,165	609	1,259	245
1978	39,409	34,043	1,606	1,194	806	1,421	338
1979	43,340	37,303	1,871	1,259	892	1,664	353
1980	41,016	34,747	2,240	1,332	736	1,603	359
1981	40,704	34,086	2,155	1,387	930	1,754	391
1982	36,457	29,950	2,168	1,611	579	1,771	379
1983	35,249	28,911	2,173	1,473	572	1,700	420
1984	36,119	29,194	2,506	1,566	592	1,903	358
1985	34,063	27,793	2,080	1,622	564	1,590	414
1986	34,416	26,861	2,882	1,654	804	1,821	394
1987	33,443	27,039	2,177	1,528	652	1,631	416
1988	33,593	26,226	2,370	1,678	576	2,131	613
1989	35,015	26,971	3,132	1,654	749	2,080	429

Note: Columns may not add due to rounding and estimation procedures.

Source: FAA

. . . AND PER AIRCRAFT

Active U.S. General Aviation Aircraft and Average Hours Annually Flown Per Aircraft, by Type

	Estimated Active Aircraft					Estimated Average Hours/Aircraft/Yr.				
	1989	1988	1987	1986	1985	1989	1988	1987	1986	1985
TOTAL AIRCRAFT	**219,737**	**210,266**	**217,183**	**220,044**	**210,654**	**155**	**154**	**148**	**149**	**158**
Piston Total	**234,804**	**107,556**	**194,455**	**195,646**	**188,191**	**138**	**138**	**137**	**135**	**151**
Single engine	**208,082**	**164,760**	**171,035**	**171,777**	**164,385**	**131**	**133**	**130**	**128**	**140**
1–3 seats	87,836	59,553	63,533	62,427	58,829	132	132	134	125	135
4 + seats	120,246	105,207	107,502	109,351	105,555	131	134	126	130	142
Multi-engine	**26,528**	**22,698**	**23,307**	**23,721**	**23,659**	**195**	**181**	**203**	**204**	**208**
1–6 seats	17,838	15,143	15,741	16,166	15,627	169	150	165	172	174
7 + seats	8,690	7,554	7,566	7,555	8,032	259	256	289	280	274
Other Piston	194	99	112	148	148	133	225	140	111	184
Turboprop Total	**6,876**	**5,259**	**5,274**	**5,964**	**5,407**	**471**	**448**	**389**	**423**	**362**
Twin Engine	6,524	5,057	5,060	5,779	5,240	467	444	386	419	360
1–12 seats	5,082	4,231	4,337	4,809	4,633	341	373	337	335	342
13 + seats	1,442	826	723	970	607	1,044	795	652	1,013	831
Other Turboprop	352	202	214	185	167	569	392	839	499	397
Turbojet Total	**4,402**	**4,187**	**4,338**	**4,480**	**4,375**	**375**	**405**	**356**	**354**	**369**
Twin Engine	4,004	3,821	3,900	4,037	3,914	385	412	371	385	375
Other	398	367	438	444	460	275	347	229	154	325
Rotocraft Total	**7,475**	**6,406**	**6,333**	**6,943**	**6,418**	**390**	**423**	**359**	**380**	**336**
Piston	3,244	2,584	2,813	2,921	2,877	236	228	229	273	192
Turbine	4,232	3,822	3,520	4,022	3,541	497	577	485	460	460
Other	**7,721**	**6,857**	**6,783**	**7,010**	**6,263**	**56**	**95**	**62**	**56**	**67**

Source: FAA

PILOTS

Active U.S. Pilot and Non-Pilot Certificates Held
(as of December 31, year indicated)

Category	1975	1976	1977	1978	1979	1980[1]	1981	1982	1983	1984	1985	1986	1987	1988	1989
Pilot—total	**728,187**	**744,246**	**783,932**	**798,833**	**814,667**	**827,071**	**764,182**	**733,255**	**718,004**	**722,376**	**709,540**	**709,118**	**699,653**	**694,016**	**700,010**
Student	176,978	188,801	203,510	204,874	210,180	199,833	179,912	156,361	147,197	150,081	146,652	150,273	146,016	136,913	142,544
Private	305,863	309,005	327,424	337,644	343,276	357,479	328,562	322,094	318,643	320,086	311,086	305,736	300,949	299,786	293,179
Commercial	189,342	187,801	188,763	185,833	182,097	183,442	168,580	165,093	159,495	155,929	151,632	147,798	143,645	143,030	144,540
Airline transport	42,592	45,072	50,149	55,881	63,652	69,569	70,311	73,471	75,938	79,192	82,740	87,186	91,287	96,968	102,087
Helicopter (only)	4,932	4,804	4,819	4,874	5,218	6,030	6,453	7,034	7,237	7,532	8,123	8,122	8,702	8,608	8,863
Glider (only)[2]	5,348	5,789	6,208	6,541	6,796	7,039	7,388	7,842	8,157	8,390	8,168	8,411	7,901	7,600	7,708
Lighter-than-air[2]	3,132	2,974	3,059	3,186	3,448	3,679	2,976	1,360	1,337	1,166	1,139	1,133	1,153	1,111	1,089
Nonpilot—total[r]	**323,934**	**334,681**	**348,584**	**362,350**	**377,213**	**393,486**	**398,368**	**420,595**	**432,890**	**447,462**	**412,741**	**410,079**	**427,962**	**448,710**	**468,405**
Mechanic[3]	205,436	212,303	220,768	228,743	237,611	250,157	262,705	277,436	288,355	298,028	274,100	284,241	297,178	312,419	326,243
Parachute rigger[3]	8,327	8,718	8,994	9,200	9,831	9,547	9,716	9,893	10,074	10,194	9,395	9,535	9,659	9,770	9,879
Ground instructor[3]	51,365	53,464	55,717	57,738	59,680	61,550	63,246	65,004	66,385	67,463	58,214	59,443	60,861	62,582	64,503
Dispatcher[3]	5,741	5,838	5,972	6,161	6,446	6,799	7,094	7,580	8,223	8,980	8,511	9,025	9,491	10,020	10,455
Flight navigator	2,321	2,214	2,155	2,092	1,994	1,936	1,785	1,695	1,636	1,603	1,542	1,512	1,145	1,400	1,357
Flight engineer	26,788	27,560	29,871	33,028	36,869	38,367	38,294	38,053	38,546	40,534	43,377	46,323	49,328	52,519	55,968
Flight instructor certificates[4]	44,777	46,236	49,362	52,201	54,398	60,440	57,523	62,492	62,201	61,173	58,940	57,355	60,316	61,798	61,472
Instrument Ratings[5]	203,954	211,364	226,334	236,312	247,096	260,461	252,535	255,073	254,271	256,584	258,559	258,845	266,122	273,804	282,804

Source: FAA

[1]For 1980 only, a valid medical certificate was defined as one that was issued within the last 27 months.

[2]Glider and lighter-than-air pilots are not required to have a medical examination; however, the totals above represent pilots who received a medical examination within the last 25 months.

[3]Numbers represent all certificates on record. No medical examination required.

[4]Not included in the total.

[5]Special ratings shown on pilot certificates which do not indicate additional certificates.

[r]Revised.

Estimated Active Pilots and Flight Instructors by FAA Region and State (December 31, 1989)

FAA Region and State	Total Pilots	Students	Private	Commercial	Airline Transport	Misc.[2]	Flight Instructor[3]
Total[1]	**700,010**	**142,544**	**293,179**	**144,540**	**102,087**	**17,660**	**61,472**
United States—Total	**675,798**	**137,653**	**288,897**	**137,084**	**95,310**	**16,654**	**60,354**
Alaskan Region—Total	**9,600**	**1,490**	**4,540**	**2,417**	**1,030**	**123**	**728**
Central—Total	**34,957**	**6,180**	**17,512**	**7,088**	**3,664**	**513**	**3,193**
Iowa	7,334	1,303	4,055	1,405	472	88	626
Kansas	9,372	1,492	4,795	1,984	978	123	879
Missouri	13,153	2,492	6,083	2,486	1,836	256	1,292
Nebraska	5,098	893	2,568	1,213	378	46	396
Eastern—Total	**91,582**	**21,317**	**37,126**	**17,848**	**12,182**	**3,109**	**8,704**
Delaware	1,732	382	697	331	281	41	194
District of Columbia	613	149	254	135	43	32	58
Maryland	9,999	2,109	4,408	1,935	1,258	259	935
New Jersey	14,522	3,422	5,800	2,570	2,234	506	1,366
New York	25,156	6,440	10,315	4,836	2,480	1,085	2,304
Pennsylvania	21,523	5,203	8,979	3,689	3,024	628	2,220
Virginia	15,525	3,037	5,488	3,878	2,681	461	1,413
West Virginia	2,502	575	1,205	474	181	67	214
Great Lakes—Total	**115,185**	**24,000**	**55,210**	**21,223**	**12,876**	**1,876**	**10,649**
Illinois	27,021	5,891	11,994	4,774	3,904	458	2,722
Indiana	12,410	2,746	6,075	2,303	1,117	169	1,148
Michigan	20,016	4,305	9,907	3,511	1,855	438	1,805
Minnesota	16,185	2,997	7,830	2,999	2,389	170	1,383
North Dakota	3,281	666	1,618	872	108	17	290
Ohio	21,936	4,554	10,810	4,108	2,185	481	2,117
South Dakota	2,494	496	1,203	594	181	20	216
Wisconsin	11,842	2,345	6,173	2,054	1,137	123	966
New England—Total	**34,465**	**8,265**	**14,638**	**5,929**	**4,683**	**950**	**2,899**
Connecticut	9,151	2,036	3,540	1,519	1,791	265	777
Maine	3,879	852	1,779	822	362	64	298
Massachusetts	13,023	3,506	5,825	2,125	1,174	392	1,098
New Hampshire	4,928	1,065	1,937	819	980	127	439
Rhode Island	1,602	343	748	306	165	42	115
Vermont	1,882	463	811	337	211	60	172
N.W. Mountain—Total	**65,470**	**12,633**	**28,029**	**13,303**	**9,976**	**1,529**	**5,940**
Colorado	17,536	3,828	6,272	3,459	3,441	536	1,797
Idaho	4,231	695	2,098	950	421	67	365
Montana	3,924	673	1,993	900	320	38	362
Oregon	10,039	1,864	5,213	2,005	765	192	837
Utah	5,690	1,180	2,418	1,025	945	122	467
Washington	22,110	4,077	8,981	4,582	3,927	543	1,946
Wyoming	1,940	316	1,054	382	157	31	166
Southern—Total	**120,250**	**24,081**	**46,123**	**26,206**	**20,773**	**3,087**	**10,441**
Alabama	9,394	1,808	3,699	2,275	748	864	883
Florida	47,220	9,061	17,960	11,015	8,335	849	4,192
Georgia	18,607	3,458	6,481	3,719	4,617	352	1,448
Kentucky	5,775	1,205	2,495	995	939	139	522
Mississippi	4,628	992	1,797	1,360	380	99	397
North Carolina	15,415	3,356	6,180	2,993	2,486	398	1,205
South Carolina	6,969	1,614	2,836	1,609	786	124	574
Tennessee	12,242	2,564	4,694	2,240	2,482	262	1,220
Southwest—Total	**81,945**	**15,233**	**33,312**	**18,434**	**13,117**	**1,849**	**7,588**
Arkansas	5,962	1,183	2,681	1,551	475	72	506
Louisiana	8,136	1,612	3,110	2,182	929	303	741
New Mexico	5,152	1,127	2,052	1,250	511	212	502
Oklahoma	10,886	2,109	5,263	2,380	982	152	928
Texas	51,809	9,202	20,206	11,071	10,220	1,110	4,911
Western-Pacific—Total	**122,344**	**24,474**	**52,407**	**24,636**	**17,009**	**3,818**	**10,212**
Arizona	15,815	3,143	6,460	3,360	2,310	542	1,531
California	97,332	19,437	43,034	19,303	12,640	2,918	7,898
Hawaii	3,814	897	866	905	946	200	284
Nevada	5,383	997	2,047	1,068	1,113	158	499
Outside U.S.—Total[4]	**24,212**	**4,891**	**4,282**	**7,456**	**6,777**	**806**	**1,118**
Other U.S. Areas	**1,977**	**601**	**841**	**354**	**338**	**43**	**0**
American Samoa	16	2	5	3	4	2	0
Canal Zone	2	1	0	0	1	0	0
Guam	138	29	27	22	60	0	0
Puerto Rico	1,528	506	509	261	215	37	0
Virgin Islands	290	62	100	66	58	4	0
Wake Island	3	1	0	2	0	0	0

Source: FAA

[1]Includes Outside U.S.
[2]Includes helicopter, glider, and lighter-than-air.
[3]Not included in total.
[4]Outside U.S. includes Other U.S. Areas outside of the 50 states and foreign countries.

Age Distribution of Active Airmen by Class and Sex*
(as of December 31, 1989)

Age	First Class		Second Class		Third Class		Total Airmen	
	Male	Female	Male	Female	Male	Female	Male	Female
Less than 15	3	1	7	2	69	14	79	17
15–19	3,544	403	5,978	619	16,168	2,361	25,690	3,383
20–24	11,315	919	15,305	1,075	25,456	2,690	52,076	4,684
25–29	18,166	1,189	19,977	1,191	35,036	3,752	73,179	6,132
30–34	23,102	1,000	20,701	1,029	42,902	4,125	86,705	6,154
35–39	18,075	528	23,260	1,004	44,084	3,913	85,419	5,445
40–44	20,050	271	26,595	816	40,874	3,555	87,519	4,642
45–49	16,288	104	19,753	571	33,262	2,445	69,303	3,120
50–54	12,213	49	14,872	342	26,132	1,642	53,217	2,033
55–59	7,306	22	11,866	291	23,575	1,130	42,747	1,443
60–64	1,426	12	8,314	229	18,583	688	28,323	929
65–69	680	5	5,841	128	10,531	303	17,052	436
70–74	143	1	1,835	43	3,902	89	5,880	133
75–79	24	1	394	13	1,024	25	1,442	39
80–84	3	—	72	1	200	3	275	4
85 and over	—	—	10	—	22	—	32	—
TOTAL	132,338	4,505	174,780	7,354	321,820	26,735	628,938	38,594
Average Age	40.0	31.3	42.5	37.2	42.4	38.0	41.9	37.1

Source: FAA

*Totals are based on active certified airmen within the past 25 months.

Estimated Total and Instrument Rated Pilots: December 31, 1976–89

Calendar Year	Total Active Pilots[1]	Instrument Rated Pilots	
		Number	Percent of Total
1989	557,466	282,804	51
1988	557,103	273,804	49
1987	553,637	266,122	48
1986	558,845	262,388	47
1985	562,888	258,559	46
1984	572,295	256,584	45
1983	570,807	254,271	45
1982	576,894	255,073	44
1981	584,270	252,535	43
1980	627,238	260,461	42
1979	604,487	247,096	41
1978	593,959	236,312	40
1977	580,422	226,334	39
1976	555,625	211,364	38

[1]Excludes student pilots. Source: FAA

Active Airmen by Type of Flying[1]

Year	Business		Other		Both	
	Total	Percent	Total	Percent	Total	Percent
1982	204,083	27.9	498,244	68.0	30,187	4.1
1983	195,707	27.3	488,917	68.3	31,234	4.4
1984	197,707	27.4	491,594	68.2	31,806	4.4
1985	206,146	29.4	471,551	67.4	22,352	3.2
1986	215,562	31.1	465,632	67.2	11,564	1.7
1987	220,012	32.1	458,751	66.9	6,789	1.0
1988	221,812	33.4	436,858	65.8	5,338	0.8
1989	224,144	33.6	435,815	65.3	7,573	1.1

Sources: FAA CAM1

[1]Based on pilot responses to a question on the medical certificate application.

U.S. Student Pilot Certificates Processed

Year	Total
1972	121,543
1973	131,384
1974	113,997
1975	127,424
1976	129,280
1977	138,816
1978	137,032
1979	139,956
1980	102,301
1981	117,962
1982	86,371
1983	94,981
1984	91,395
1985	87,004
1986	88,126
1987	86,011
1988	80,300
1989	88,926

Source: FAA

Pilot Certificates Issued, by Category
1964–1989

Year	Student		Private		Commercial		Airline Transport		Helicopter (only)		Glider (only)	
	Original	Additional[1]	Original	Additional[1]	Original	Additional[1]	Original	Additional[1]	Original	Additional[1]	Original	Additional[1]
1964	84,629	NA	26,425	4,394	8,772	10,123	983	3,114	344	48	191	NA
1965	94,635	NA	33,337	4,981	11,043	12,557	1,177	4,018	549	74	252	NA
1966	129,180	NA	42,464	5,648	14,210	15,360	1,513	5,571	822	53	316	2
1967	159,399	NA	57,520	8,036	19,996	21,272	2,745	5,726	1,411	105	422	4
1968	149,444	NA	54,232	7,926	20,157	21,795	2,601	4,911	1,433	94	476	17
1969	132,926	NA	54,597	8,096	21,399	25,706	3,469	4,616	2,326	148	521	NA
1970	126,871	NA	53,026	8,374	21,130	25,746	3,745	3,917	4,250	187	652	NA
1971	128,004	NA	49,579	7,775	16,356	22,695	2,439	2,567	3,448	172	611	10
1972	121,543	NA	50,523	8,371	16,043	22,236	2,604	3,410	2,421	263	713	14
1973	131,384	NA	53,140	9,797	16,769	24,823	3,224	4,391	1,719	507	892	131
1974	113,997	NA	48,501	9,866	17,693	24,638	3,219	3,557	1,298	387	832	244
1975	127,424	NA	49,733	9,734	12,620	21,860	2,765	3,370	866	251	230	158
1976	129,280	NA	55,583	12,618	13,577	22,059	3,869	3,910	1,064	276	848	238
1977	203,510	NA	54,657	15,104	11,121	22,806	5,697	6,229	944	328	792	220
1978	137,032	NA	58,064	16,048	11,789	17,501	6,912	5,921	1,122	287	759	188
1979	135,956	NA	54,466	16,466	12,627	17,793	8,981	6,603	1,300	283	642	157
1980	102,301	NA	50,458	16,035	12,452	16,015	7,116	6,289	1,721	272	583	151
1981	111,531	NA	45,713	14,897	10,657	12,146	4,763	5,991	1,985	302	629	164
1982	90,816	NA	52,144	16,276	11,048	11,910	5,037	7,956	2,256	330	793	184
1983	92,239	NA	41,210	12,721	8,789	9,513	5,643	8,187	1,932	315	606	162
1984	90,167	NA	36,545	11,784	7,702	8,892	5,099	9,335	1,808	319	524	139
1985	86,060	NA	35,402	11,636	8,404	7,197	6,081	9,192	2,105	207	537	138
1986	88,699	NA	34,816	12,672	8,889	9,241	6,498	10,372	2,209	234	514	109
1987	85,611	NA	42,278	16,302	11,314	11,365	7,678	11,956	2,217	293	542	74
1988	86,193	NA	39,900	15,800	12,042	10,597	7,461	11,209	1,947	287	475	28
1989	87,698	NA	35,360	22,240	13,759	11,778	7,829	12,698	2,240	252	336	22

Source: FAA

Notes: [1]An additional rating added to an existing pilot certificate. (eg an instrument rating added to a private certificate).

AIRPORTS AND AERONAUTICAL FACILITIES

U.S. Civil and Joint-Use Airports, Heliports, Stolports, and Seaplane Bases on Record by Type of Ownership December 31, 1989

FAA Region and State	Total Facilities	Total Facilities, By Ownership		Airports Open to Public Use				
				Paved Airports[1]		Unpaved Airports[1]		Total
		Public	Private	Lighted	Not Lighted	Lighted	Not Lighted	
Total	**17,446**	**5,084**	**12,362**	**3,512**	**322**	**443**	**986**	**5,263**
United States—total*	**17,377**	**5,034**	**12,343**	**3,489**	**319**	**443**	**973**	**5,224**
Alaskan—total	**593**	**400**	**193**	**39**	**5**	**88**	**187**	**319**
Central—total	**1,406**	**474**	**932**	**382**	**15**	**63**	**72**	**532**
Iowa	273	121	152	96	1	28	19	144
Kansas	385	131	254	101	7	18	23	149
Missouri	431	127	304	111	6	7	14	138
Nebraska	317	95	222	74	1	10	16	101
Eastern—total	**2,208**	**335**	**1,873**	**300**	**27**	**52**	**95**	**474**
Delaware	34	4	30	5	0	4	1	10
District of Columbia	17	7	10	2	0	0	0	2
Maryland	162	21	141	28	2	4	5	39
New Jersey	322	41	281	36	3	4	10	53
New York	493	82	411	80	11	22	37	150
Pennsylvania	765	77	688	89	6	18	32	145
Virginia	322	74	248	61	4	2	7	74
West Virginia	93	29	64	27	3	2	8	40
Great Lakes—total	**4,235**	**905**	**3,330**	**729**	**22**	**160**	**177**	**1,088**
Illinois	938	112	826	90	1	21	6	118
Indiana	554	88	466	77	4	10	20	111
Michigan	434	135	299	120	8	32	53	213
Minnesota	475	149	326	97	1	34	17	149
North Dakota	480	97	383	67	2	14	17	100
Ohio	720	135	585	126	2	19	34	181
South Dakota	158	78	80	52	2	16	6	76
Wisconsin	476	111	365	100	2	14	24	140
New England—total	**612**	**139**	**473**	**118**	**16**	**4**	**36**	**174**
Connecticut	130	16	114	18	1	1	3	23
Maine	148	46	102	30	7	2	16	55
Massachusetts	181	33	148	37	4	0	5	46
New Hampshire	69	15	54	16	2	1	6	25
Rhode Island	23	9	14	7	0	0	0	7
Vermont	61	20	41	10	2	0	6	18

*United States total excludes Puerto Rico, Virgin Islands, N. Mariana Islands, and South Pacific.
[1]Among all airports open to the public, either privately or publicly owned.

(Continued from page 20)

FAA Region and State	Total Facilities	Total Facilities, By Ownership		Airports Open to Public Use				
				Paved Airports[1]		Unpaved Airports[1]		Total
		Public	Private	Lighted	Not Lighted	Lighted	Not Lighted	
Northwest Mountain—total	**1,805**	**688**	**1,117**	**384**	**62**	**29**	**167**	**642**
Colorado	385	95	290	61	8	5	9	83
Idaho	211	132	79	45	8	0	65	118
Montana	214	121	93	65	10	13	36	124
Oregon	372	102	270	55	21	3	22	101
Utah	111	59	52	40	4	0	5	49
Washington	412	130	282	85	9	7	23	124
Wyoming	100	49	51	33	2	1	7	43
Southern—total	**2,285**	**817**	**1,468**	**630**	**57**	**27**	**80**	**794**
Alabama	195	97	98	88	5	4	5	102
Florida	645	154	491	95	9	7	16	127
Georgia	363	133	230	98	10	1	7	116
Kentucky	148	71	77	53	9	0	8	70
Mississippi	207	89	118	71	12	2	6	91
North Carolina	332	97	235	84	5	7	24	120
Puerto Rico	29	17	12	10	1	0	0	11
South Carolina	150	66	84	56	1	5	11	73
Tennessee	208	87	121	73	5	1	3	82
Virgin Islands	8	6	2	2	0	0	0	2
Southwest—total	**2,910**	**809**	**2,101**	**632**	**50**	**17**	**103**	**802**
Arkansas	218	111	107	81	8	0	7	96
Louisiana	419	100	319	68	3	1	9	81
New Mexico	170	79	91	47	7	0	16	70
Oklahoma	406	162	244	113	10	9	21	153
Texas	1,697	357	1,340	323	22	7	50	402
Western—total	**1,392**	**517**	**875**	**298**	**68**	**3**	**69**	**438**
Arizona	270	91	179	50	7	0	17	74
California	910	316	594	204	49	1	12	266
Hawaii	53	17	36	10	3	0	0	13
Nevada	127	66	61	23	7	2	27	59
South Pacific**	32	27	5	11	2	0	13	26

*Excludes Puerto Rico, Virgin Islands, N. Mariana Islands, and South Pacific.

**American Samoa, Guam, and Trust Territories.

[1]Among all airports open to the public, either publicly or privately owned.

Source: FAA

FAA Air Route Facilities and Services: 1972 through 1989

December 31,	VOR VORTAC	Nondirectional Beacons	Air Route Traffic Control Centers	Airport Traffic Control Towers	Flight Service Stations	International Flight Service Stations	Instrument Landing Systems	Airport Surveillance Radar
1972	991	706	27	355	324	7	403	125
1973	995	739	27	403	315	7	467	142
1974	1,000	793	27	417	320	7	490	156
1975	1,011	848	26	487	321	7	580	177
1976	1,020	920	25	488	321	7	640	175
1977	1,021	959	25	495	319	7	678	182
1978	1,020	988	25	494	319	6	698	185
1979	1,028	1,015	25	499	318	6	753	192
1980	1,037	1,055	25	502	317	6	796	192
1981	1,033	1,123	25	501	316	6	840	199
1982	1,029	1,143	25	492	316	6	884	197
1983	1,032	1,183	25	494	316	5	934	197
1984	1,035	1,211	25	497	310	5	955	197
1985	1,039	1,222	25	500	302	4	968	198
1986	1,043	1,239	25	686	293	3	977	312
1987	1,045	1,262	25	686	253	3	1,111	312
1988	1,043	1,287	24	692	220	3	1,130	311
1989	1,044[a]	1,263[b]	24[c]	693[d]	199	3	1,147[e]	312[f]

[a]Includes 73 nonfederal and 38 military.

[b]Includes 919 nonfederal and 65 military.

[c]Includes 3 military combined center radar approach control facilities (CERAP).

[d]Includes 67 nonfederal and 209 military.

[e]Includes 18 Landing Directional Aid (LDA), 124 nonfederal, 20 military, 178 partial, 7 ISMLS, and 36 SDF.

[f]Includes FAA, military and nonfederal.

Source: FAA

FORECASTS AND OTHER INFORMATION

Active General Aviation Aircraft
(Thousands)

As of December 31	Fixed Wing				Rotorcraft		Other	Total
	Piston		Turboprop	Turbojet	Piston	Turbine		
	Single Engine	Multi-Engine						
Historical								
1979	168.4	25.1	3.5	2.7	3.1	2.7	4.8	210.3
1980	168.4	24.6	4.1	3.0	2.8	3.2	4.9	211.0
1981	167.9	25.5	4.7	3.2	3.3	3.7	5.0	213.3
1982	164.2	25.0	5.2	4.0	2.4	3.7	5.2	209.7
1983	166.4	25.1	5.5	3.9	2.5	4.0	5.9	213.3
1984	171.9	25.5	5.8	4.3	2.9	4.2	6.3	220.9
1985	164.4	23.8	5.4	4.4	2.9	3.5	6.3	210.7
1986	171.8	23.9	6.0	4.5	2.9	4.0	7.0	220.0
1987	171.0	23.4	5.3	4.4	2.8	3.5	6.8	217.2
1988E	164.8	22.8	5.3	4.2	2.6	3.8	6.9	210.3
Forecast								
1989	166.2	22.8	5.5	4.3	2.5	4.5	7.1	212.9
1990	167.0	22.6	5.7	4.6	2.6	4.7	7.4	214.6
1991	167.7	22.5	5.8	4.8	2.6	5.3	7.7	216.4
1992	167.7	22.4	5.9	5.0	2.5	5.5	8.0	217.0
1993	167.0	22.4	6.1	5.3	2.4	5.9	8.3	217.4
1994	166.5	22.5	6.4	5.6	2.4	6.2	8.6	218.2
1995	166.0	22.6	6.7	5.9	2.4	6.6	8.9	219.1
1996	165.5	22.7	6.9	6.1	2.4	7.1	9.0	219.7
1997	165.2	22.8	7.1	6.3	2.3	7.3	9.2	220.2
1998	165.0	22.9	7.3	6.5	2.2	7.7	9.3	220.9
1999	164.7	23.0	7.5	6.7	2.2	8.1	9.5	221.7
2000	164.4	23.1	7.7	6.9	2.1	8.5	9.7	222.4

Source: FAA

Notes: Detail may not add to total because of independent rounding.
An active aircraft must have a current registration and it must have been flown at least one hour during the previous calendar year.

Forecast Active Pilots by Type of Certificate
(Thousands)

As of December 31	Student	Private	Commercial	Airline Transport	Helicopter	Glider	Lighter-Than-Air	Total	Instrument Rated[1]
Forecast									
1990	139.6	300.7	145.0	101.5	8.7	7.7	1.1	704.3	278.7
1991	142.0	302.8	146.5	104.7	9.0	8.3	1.2	714.5	280.7
1992	144.1	303.7	148.0	108.6	9.1	8.4	1.2	723.1	284.9
1993	145.9	304.3	149.4	112.6	9.2	8.5	1.2	731.1	289.2
1994	147.3	304.9	150.9	116.7	9.4	8.6	1.3	739.1	293.5
1995	148.4	305.8	152.4	121.0	9.5	8.7	1.4	747.2	297.0
1996	149.1	306.8	154.0	124.4	9.6	8.8	1.5	754.2	300.6
1997	149.7	307.7	155.5	127.8	9.7	8.9	1.6	760.9	304.2
1998	150.2	308.6	157.1	131.3	9.8	9.0	1.7	767.7	307.9
1999	150.7	309.5	158.6	133.9	9.9	9.1	1.8	773.5	310.4
2000	151.2	310.5	160.2	136.6	10.0	9.2	1.9	779.6	312.0
2001	151.7	311.4	161.8	139.3	10.1	9.3	2.0	785.6	313.6

Source: FAA

(1) Instrument rated pilots should not be added to other categories in deriving total.

Notes: Detail may not add to total because of independent rounding.

FLIGHT HOURS FORECAST—

General Aviation Hours Flown
(Millions)

Fiscal Year	Fixed Wing				Rotocraft			
	Piston							
	Single Engine	Multi-Engine	Turboprop	Turbojet	Piston	Turbine	Other	Total
Historical								
1980	28.8	6.6	2.1	1.3	0.9	1.8	0.4	41.9
1981	27.9	6.4	2.2	1.5	0.8	1.8	0.4	41.0
1982	25.2	6.0	2.1	1.6	0.6	1.8	0.4	37.7
1983	23.8	5.8	2.2	1.5	0.6	1.7	0.4	36.0
1984	23.4	5.7	2.4	1.6	0.6	1.9	0.4	36.0
1985	23.4	5.7	2.6	1.8	0.6	1.7	0.4	36.2
1986	22.2	4.9	2.7	1.7	0.8	1.8	0.4	34.5
1987	22.3	4.9	2.2	1.6	0.6	1.6	0.4	33.6
1988	22.0	4.4	2.3	1.6	0.6	2.0	0.6	33.5
1989E	22.1	4.3	2.4	1.7	0.5	2.3	0.6	33.9
Forecast								
1990	22.1	4.2	2.5	1.8	0.5	2.3	0.6	34.0
1991	22.2	4.1	2.6	1.9	0.5	2.6	0.6	34.5
1992	22.3	4.1	2.7	2.0	0.5	3.0	0.6	35.2
1993	22.4	4.1	2.7	2.1	0.6	3.0	0.6	35.2
1994	22.5	4.1	2.8	2.2	0.6	3.4	0.6	36.2
1995	22.5	4.2	2.9	2.3	0.6	3.7	0.8	37.0
1996	22.6	4.2	3.1	2.4	0.6	4.0	0.8	37.7
1997	22.6	4.3	3.2	2.5	0.5	4.3	1.0	38.4
1998	22.7	4.3	3.3	2.6	0.5	4.4	1.0	38.8
1999	22.8	4.3	3.4	2.7	0.5	4.5	1.0	39.2
2000	22.9	4.4	3.5	2.8	0.5	4.8	1.0	39.9
2001	23.0	4.4	3.5	2.9	0.5	4.9	1.2	40.4

E = Estimate

Notes: Detail may not add to total because of independent rounding

Source: FAA

FUEL USE FORECAST—

General Aviation Aircraft Fuel Consumption
(Millions of Gallons)

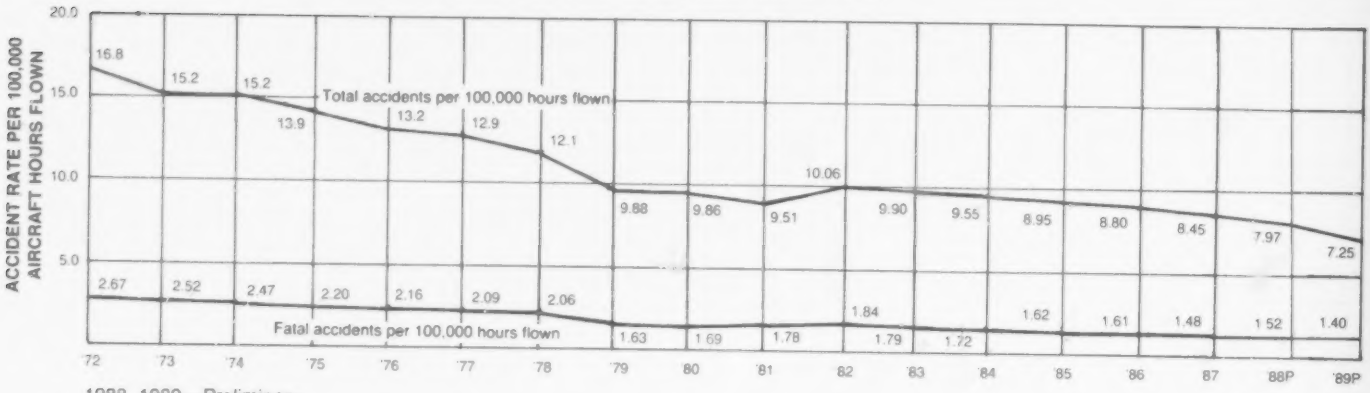
Fiscal Year	Fixed Wing				Rotocraft			
	Piston							
	Single Engine	Multi-Engine	Turboprop	Turbojet	Piston	Turbine	Other	Total
Historical								
1980	287.6	231.1	223.9	474.6	13.3	59.7	0.8	1,291.0
1981	276.5	206.1	219.6	483.2	13.3	57.8	0.8	1,257.3
1982	251.2	197.4	230.8	562.1	9.7	62.5	0.5	1,314.2
1983	235.1	189.3	230.9	396.2	7.8	54.2	0.4	1,113.9
1984	248.8	196.3	236.4	408.0	8.5	62.9	0.2	1,161.1
1985	249.4	178.4	210.2	433.2	8.7	58.9	0.1	1,138.9
1986	242.0	157.8	230.0	451.4	11.0	56.7	0.1	1,149.0
1987	236.5	148.5	197.3	409.4	10.1	55.4	0.1	1,057.3
1988	235.4	148.5	189.1	409.4	10.1	55.4	0.1	1,048.0
1989E	236.5	130.3	197.3	42[illegible].0	7.2	79.6	0.2	1,086.0
Forecast								
1990	236.5	127.3	205.5	460.6	7.2	79.6	0.2	1,116.8
1991	237.5	124.2	213.7	486.2	7.2	90.0	0.2	1,159.0
1992	238.6	124.2	221.9	511.8	7.2	103.8	0.2	1,207.7
1993	239.7	124.2	221.9	537.4	8.6	103.8	0.2	1,235.8
1994	240.7	124.2	230.2	563.0	8.6	117.6	0.2	1,248.6
1995	240.7	127.3	238.4	588.6	8.6	128.0	0.2	1,331.8
1996	241.8	127.3	254.8	614.2	8.6	138.4	0.2	1,385.3
1997	241.8	130.3	263.0	639.8	7.2	148.8	0.3	1,431.1
1998	242.9	130.3	271.3	665.3	7.2	152.2	0.3	1,469.5
1999	244.0	130.3	279.5	690.9	7.2	155.7	0.3	1,507.8
2000	245.0	133.3	287.7	716.8	7.2	166.1	0.3	1,556.1
2001	246.1	133.3	287.7	742.1	7.2	169.5	0.3	1,586.3

E = Estimate

Source: FAA

HISTORICAL SAFETY RECORD

Accident Rates in U.S. General Aviation (1972–1989)



1988, 1989—Preliminary

Source—NTSB

AIRCRAFT FUEL CONSUMPTION

1989 General Aviation Total Fuel Consumed and Average Fuel Consumption Rate By Aircraft Type

Aircraft Type	Average Rate GPH	Estimated Fuel Use (mil gal)	Percent Standard Error
Fixed Wing			
Fixed Wing—Piston			
1 Eng: 1-3 Seats	6.1	56.3	4.2
1 Eng: 4+ Seats	11.6	149.0	3.0
1 Engine: Total	8.1	205.4	2.4
2 Eng: 1-6 Seats	28.8	72.5	4.5
2 Eng: 7+ Seats	35.5	62.8	6.5
2 Engine: Total	31.5	135.3	3.9
Piston: Other	0.0	0.0	0.0
Piston: Total	**13.0**	**340.7**	**2.1**
Fixed Wing—Turboprop			
2 Eng: 1-12 Seats	81.0	134.0	5.5
2 Eng 13+ Seats	100.4	117.6	10.2
2 Engine: Total	88.6	251.5	5.6
Turboprop: Other	32.4	4.3	27.2
Turboprop: Total	**85.3**	**255.8**	**5.5**
Fixed Wing—Turbojet			
2 Engine: Total	253.4	391.6	4.8
Turbojet: Other	385.6	40.3	14.8
Turbojet: Total	**267.2**	**431.9**	**4.5**
Fixed Wing: Total	**53.4**	**1,028.4**	**2.5**
Rotorcraft			
Piston	N/A	N/A	N/A
Turbine	N/A	N/A	N/A
Rotorcraft: Total	**N/A**	**N/A**	**N/A**
Other	16.7	5.1	13.0
Total	**52.8**	**1,033.6**	**2.4**
Total: Jet Fuel	158.6	687.7	3.5
Total: Aviation Gasoline	13.1	345.9	2.1

Source: FAA

Note: Row and column summations from printed totals due to estimation procedures.

GAMA MEMBERS

General Aviation Manufacturers Association

The General Aviation Manufacturers Association (GAMA)—a national trade association headquartered in Washington, D.C., represents 33 U.S. manufacturers of general aviation aircraft, engines, avionics, and related items.

Aeroquip Corporation
Aerospace Division
300 South East Avenue
Jackson, MI 49203-1972
(517) 787-8121

Aire-Sciences, Inc.
216 Passaic Avenue
Fairfield, NJ 07006
(201) 228-1880

Air Treads
Goodyear Tire and Rubber Company
1000 Tradeport Blvd. Suite 1010
Atlanta, GA 30354-2911
(404) 362-3602

Allied-Signal Aerospace Company
Bendix King General Aviation
Avionics Division
400 North Rogers Road
Olathe, KS 66062
(913) 782-0400

Allied-Signal Aerospace Company
Garrett Engine Division
111 South 34th Street
Phoenix, AZ 85010
(602) 231-1000

Aviation Simulation Technology, Inc.
Hanscom Field-East
Bedford, MA 01730
(617) 274-6600

Beech Aircraft Corporation
9709 East Central
Wichita, KS 67201-0085
(316) 681-7111

Century Flight Systems, Inc
P.O. Box 610
Mineral Wells, TX 76067
(817) 325-2517

Cessna Aircraft Company
P.O. Box 7704
Wichita, KS 67277
(316) 946-7400

Collins Commercial Avionics
Rockwell International
400 Collins Road, NE
Cedar Rapids, IA 52498
(319) 395-1000

Commander Aircraft Company
7200 NW 63rd, Hangar #8
Bethany, OK 73008
(405) 495-8080

Elano Corporation
P.O. Box 217
Alpha, OH 45301-0217
(513) 427-7035

Fairchild Aircraft Corporation
P.O. Box 7[illegible]0
San Antonio, TX 78279-0490
(512) 824-9421

FlightSafety International, Inc.
Marine Air Terminal
LaGuardia Airport
New York, NY 11371-1061
(718) 565-4100

Global-Wulfsberg Systems
2144 Michelson Drive
Irvine, CA 92715
(714) 851-0119

BFGoodrich Aerospace
250 N Cleveland-Massillon Road
Akron, OH 44313-0501
(216) 374-2000

Gulfstream Aerospace Corporation
P.O. Box 2206
Savannah, GA 31402
(912) 964-3000

Hartzell Propeller Inc.
One Propeller Place
Piqua, OH 45356-2634
(513) 778-4200

Honeywell Inc
Business & Commuter Aviation
Systems Division
P.O. Box 29000
Phoenix, AZ 85038
(602) 863-8900

Jeppesen Sanderson, Inc.
55 Inverness Drive East
Englewood, CO 80112-5498
(303) 799-9090

Learjet Inc.
P.O. Box 7077
Wichita, KS 67277-7707
(316) 946-2000

Marathon Power Technologies
P.O. Box 8233
Waco, TX 76714-8233
(817) 776-0650

McCreary Tire and Rubber Company
Polymer Enterprises, Inc.
1600 Washington St.
Indiana, PA 15701
(412) 349-9010

Parker Hannifin Corporation
Parker Bertea Aerospace Group
18321 Jamboree Blvd.
Irvine, CA 92715
(714) 833-3000

Piper Aircraft Corporation
P.O. Box 1328
Vero Beach, FL 32961-1328
(305) 567-4361

Precision Airmotive Corporation
3220 100th St., SW, #E
Everett, WA 98204
(206) 353-8181

Sabreliner Corporation
18118 Chesterfield Airport Road
Chesterfield, MO 63005-1121
(314) 537-3660

SimuFlite Training
International
P.O. Box 619119
Dallas Ft. Worth, TX 75261
(214) 456-8000

Teledyne Continental Motors
Aircraft Products Division
P.O. Box 90
Mobile, AL 36601
(205) 438-3411

Textron Lycoming
652 Oliver Street
Williamsport, PA 17701
(717) 327-7000

Unison Industries, Inc.
7575 Baymeadows Way
Jacksonville, FL 32256
(904) 739-4000

United Technologies Corporation
Pratt & Whitney Canada
1000 Marie-Victorin Blvd.
Lonqueuil, Quebec
Canada J4G 1A1
(514) 677-9411

Woodward Governor Company
P.O. Box 7001
Rockford, IL 61125-7001
(815) 877-7442

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